## ABSTRACT OF THE INVENTION

The present invention relates, first, to methods and compositions for the modulation of acid sphingomyelinase (ASM)-related processes, including apoptosis. Such apoptosis 5 can include, but is not limited to, environmental stress-induced apoptosis such as, for example, ionizing radiation and/or chemotherapeutic agent-induced apoptosis. Apoptosis can be characterized by a cellular morphology comprising cellular condensation, nuclear condensation or zeiosis. The 10 present invention further relates to methods for the identification of compounds which modulate (i.e., either increase or decrease) sensitivity to ASM-related processes, including apoptosis.

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